

APPARATUS FOR ADJUSTING WIDTH OF DRIVE CHANNEL **OF NAILER**

BACKGROUND OF THE INVENTION

Field of the Invention

5 The present invention relates to a nailer, and more particularly to an apparatus for adjusting width of drive channel of nailer for providing well-matched drive channels for vary sized nails.

Description of the Prior Arts

 The width of drive channel of a conventional nailer is normally
10 fixed, although the channel assembly is applicable to different sized band of nails with an assistance of a pushing device, there is still disadvantages such as unstable hold of the smaller nails will be caused in real operation. With reference to Fig. 1, wherein a conventional channel assembly 10 is interiorly defined with a track 11 for passage of nails 12.
15 The track 11 is able to accommodate vary sized nails 12 by cooperating with a pushing device, however, due to the track 11 is fixed in width, it certainly is made in width corresponding to the largest nails 12. In this case, when smaller nail 12 is put in the relative large sized track 11, the base body of the small nail 12 is susceptible to sway in the process of
20 push and position, meanwhile, other problems are possibly caused in operation (such as unstable operation of nails pushing, broken and jam of nails, and the noises arisen in the nailing operation).

 The present invention has arisen to mitigate and/or obviate the

afore-described disadvantages of the conventional drive channel assembly of a nailer.

SUMMARY OF THE INVENTION

The primary object of the present invention is to provide an
5 apparatus for adjusting width of drive channel of nailer so as to provide a
best-matched drive channel for vary sized nails. In which, at a side of a
track of the channel assembly is slidably defined with a push plate which
is adjustable in position for positioning different sized nails, so as to
increase the width of the track by virtue of engagement of plural blocks
10 of the push plate in a plurality of recesses in the channel assembly, vice
versa, the width of the track can be reduced by the plural blocks of the
push plate abutting against the internal surface of the channel assembly.

The present invention will become more obvious from the
following description when taken in connection with the accompanying
15 drawings, which shows, for purpose of illustrations only, the preferred
embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a cross sectional view of a conventional channel
assembly of a nailer;

20 Fig .2 is a plan view of an apparatus for adjusting width of drive
channel of nailer in accordance with the present invention;

Fig. 3 is a cross sectional view of the apparatus for adjusting
width of drive channel of nailer in accordance with the present invention,

which being adjusted in a position for accommodating small nails;

Fig. 4 is another cross sectional view of the apparatus for adjusting width of drive channel of nailer in accordance with the present invention;

5 Fig. 5 is a cross sectional view of the apparatus for adjusting width of drive channel of nailer in accordance with the present invention, which being adjusted in a position for accommodating big nails;

Fig. 6 is a cross sectional view taken from another of the apparatus for adjusting width of drive channel of nailer in accordance
10 with the present invention, which being adjusted in a position for accommodating small nails;

Fig. 7 is a cross sectional view taken from another of the apparatus for adjusting width of drive channel of nailer in accordance with the present invention, which being adjusted in a position for
15 accommodating big nails.

DETAILED DESCRIPTION OF THE PREFERRED **EMBODIMENT**

Referring first to Figs. 2-7, an apparatus for adjusting width of drive channel of power nailer in accordance with the present invention
20 generally comprises a channel assembly 20, a push plate 30, an adjusting bolt 40, a washer 50 and a spring 60, which is fixed to a power nailer 70.

The channel assembly 20 is fixed to the power nailer 70 and interiorly defined with a track 21 corresponding to a band of nails 71. On

the surface of the channel assembly 20 corresponding to a side of the track 21 is provided with a long-strip slot 22, in which a plurality of square-shaped open recesses 23 are defined respectively, above the long-strip slot 22 thereof is defined with a groove 24 which is provided at both
5 sides with a first hole 241 and a second hole 242, and a necking groove 243 is defined therebetween for connecting them together.

The push plate 30 is slidably disposed in the long-strip slot 22 of the channel assembly 20 and provided at a side corresponding to the track 21 with a push surface 31 for pushing the band of nails 71. The push
10 plate 30 is further provided at another side thereof corresponding to square-shaped open recesses 23 of the channel assembly 20 with a plurality of square blocks 32 which can be received in the corresponding square-shaped open recesses 23 respectively. Still on the push plate 30 where corresponding to the groove 24 of the long-strip slot 22 is further
15 provided with a locking seat 33 having a threaded hole 331 located corresponding to the groove 24.

The adjusting bolt 40 including a rod portion 41 and a push head 42, at the front end of the rod portion 41 is provided with plural threads 411 and the diameter of the rod portion 41 is designed corresponding to
20 that of the necking groove 243 of the groove 24 of the channel assembly 20. The rod portion 41 serves to screw in the threaded hole 331 of the locking seat 33 of the push plate 30 by virtue of the threads 411 after passing through the groove 24. Moreover, on the rod portion 41 adjacent

to the threads 411 a flange 412 is defined having an external diameter corresponding to the first and second hole 241 and 242 of the groove 24 and further has peripheral chamfer 413 defined at the periphery thereof.

The washer 50 is mounted to the rod portion 41 of the adjusting
5 bolt 40 and located between the push head 42 of the same and the external surface of the channel assembly 20. The washer 50 is provided at the center thereof with a through hole 51 for passage of the rod portion 41 and at periphery of the through hole 51 thereof a peripheral chamfer 52 is formed with corresponding to the flange 412 of the rod portion 41.

10 The spring 60 is mounted to the rod portion 41 of the adjusting bolt 40 and biased between the push head 42 of the same and the washer 50.

Referring specially to Fig. 3, which shows in case that a band of small nails 71 are applied, the track 21 of the channel assembly 20 serves
15 for receiving the nails 71. The push plate 30 in the long-strip slot 22 will take advantage of the plural blocks 32 to abut against the internal surface of the long-strip slot 22. At this moment, the flange 412 on the rod portion 41 of the adjusting bolt 40 will be positioned in the first hole 241 of the groove 24. Furthermore, the spring 60 cooperates with the
20 adjusting bolt 40 so as to enable the push surface 31 of the push plate 30 to position the band of small nails 71 and adjust the width of the track 21 to a moderate extent.

Referring further to Fig. 4, which shows in case that a band of

bigger nails 71 are applied, the user takes the band of small nails 71 out first, then pushes the push head 42 of the adjusting bolt 40 such that the rod portion 41 of the adjusting bolt 40 pushes the push plate 30 to the original position of the small nails, as a result, the blocks 32 of the push
5 plate 30 don't abut against the internal surface of the long-strip slot 22 any more and the flange 42 of the rod portion 41 is disengaged from the first hole 241 of the groove 24. At this moment, the minor diameter of the rod portion 41 is exactly corresponding to the groove 24, thereby the user may slightly push the adjusting bolt 40 upward so as to make the rod
10 portion 41 enter the necking groove 243 of the groove 24, and the push plate 30 moves synchronously along with the adjusting bolt 40 (the blocks 32 of the push plate 30 will gradually approach the corresponding recesses 23 of the channel assembly 20).

Referring to Fig. 5, until the user pushes the rod portion 41 into
15 the second hole 242 of the groove 24, at this moment, the blocks 32 of the push plate 30 are aligned to the corresponding recesses 23 of the channel assembly 20. After the user released his fingers from the adjusting bolt 40, the spring 60 will push the push head 42 of the adjusting bolt 40 outward, and by making use of the cooperation between
20 the peripheral chamfer 413 on the flange 412 of the adjusting bolt 40 and that 52 around the through hole 51 of the washer 50 so as to allow the flange 412 of the adjusting bolt 40 to enter the second hole 242 of the groove 24. At the same time, the blocks 32 on the push plate 30 are

received in the corresponding recesses 23 of the channel assembly 20 respectively. Since the surface of each block 32 is higher than that of the locking seat 33, the push plate 30 in the long-strip slot 22 will be closer to the internal surface of the same than previous, while the spring 60 will
5 readjust itself to position the adjusting bolt 40 by virtue of its elastic force, and accordingly the push surface 31 of the push plate 30 leaves more spaces to the track 21. Such that the track 21 will be larger than before whereby to receive and position band of larger-sized nails 71, it further overcomes the disadvantage of unstable nails happened in the
10 conventional nailer.

While we have shown and described various embodiments in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

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